

Appl. No. 09/954,760
Amtd. dated 10/26/04
Reply to Office Action of 8/26/04

PATENT
Docket: 010420

IN THE CLAIMS:

CLAIMS:

1. Cancel.
2. Cancel.
3. Cancel.
4. Cancel.
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21. Cancel.
22. (Original) An apparatus comprising:
an exponent extractor that extracts an exponent component from a number;
a mantissa extractor that extracts a mantissa component from the number;
a first lookup table used to convert the exponent component from a first
domain to a second domain;
a second lookup table used to convert the mantissa component from the first
domain to the second domain; and
an adder that combines the exponent component and the mantissa component
in the second domain.

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23. (Original) An apparatus comprising:
an exponent extractor that extracts an exponent component from a number;
a mantissa extractor that extracts a mantissa component from the number;
a first lookup table used to convert the exponent component from a first
domain to a second domain;
a second lookup table used to convert the mantissa component from the first
domain to the second domain; and
an adder that combines the exponent component and the mantissa component
in the second domain,
further comprising a shifter that truncates the combination of the exponent
component and the mantissa component in the second domain.

24. (Original) The apparatus of claim 23, further comprising a shifter that rounds
the combination of the exponent component and the mantissa component in the
second domain.

25. (Original) The apparatus of claim 23, wherein the first domain is a linear
domain and the second domain is a logarithmic domain using decibels as units.

26. (Original) The apparatus of claim 23, wherein the second lookup table is a
mantissa table comprising a subset of a total number of mantissa values, the apparatus
further comprising address manipulation logic that performs an interpolation, wherein
an entry is selected from the mantissa table based on the interpolation.

27. (Original) The apparatus of claim 23, wherein the second lookup table is a
mantissa table comprising a subset of a total number of mantissa values, the apparatus
further comprising address manipulation logic that performs a shifting operation on
input, wherein an entry is selected from the mantissa table based on the shifted input.

28. (Original) The apparatus of claim 27, wherein the second lookup table is a
mantissa table including entries that comprise non-uniform sampling of a logarithmic
function.

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30. (Amended herewith) An apparatus comprising:
memory that stores a subset of a total number mantissa values as entries in a
mantissa table; and
address manipulation logic that generates a mantissa value not included in the
subset by performing an operation on input and selecting one of the entries based on a
result of the operation.

~~The apparatus of claim 29, wherein the address manipulation logic generating the~~
mantissa value not included in the subset by performing a shifting operation on input
and selecting one of the entries based on the shifted input.

31. (Amended herewith) An apparatus comprising:
memory that stores a subset of a total number mantissa values as entries in a
mantissa table; and
address manipulation logic that generates a mantissa value not included in the
subset by performing an operation on input and selecting one of the entries based on a
result of the operation.

~~The apparatus of claim 29, wherein the address manipulation logic generating~~
the mantissa value not included in the subset by interpolating and then selecting one
of the entries based on the interpolation.